

Northern Gulf of Mexico Whale Shark Fact Sheet
Provided by Researchers at the Gulf Coast Research Laboratory

Background

- Researchers at The University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL) in Ocean Springs, Mississippi are currently investigating the seasonal distribution, abundance, movement patterns, and habitat preferences of whale sharks, *Rhincodon typus*, in the northern Gulf of Mexico (GOM).
- Despite the fact that the whale shark is the largest fish in the ocean, little is known about its biology and ecology.
- Historical information on whale sharks in the northern GOM is lacking. There are only a few historical sighting accounts on record.
- An online whale shark sightings survey and informative web site is available at: www.usm.edu/gcrl/whaleshark In addition to encouraging participation in the survey, its intent is to provide basic information to the public on whale sharks found in our region.

GCRL Research

- GCRL scientists were the first to document an aggregation of whale sharks feeding on fish eggs in the northern GOM. A plankton survey at the feeding site showed that fish eggs were present in high densities. The eggs were molecularly identified by Dr. Joe Quattro at the University of South Carolina as little tunny (*Euthynnus alletteratus*, 99 percent) and crevalle jack (*Caranx hippos*, one percent). It is believed that the whale sharks were feeding on these spawned eggs.
- The GCRL Whale Shark Sightings Survey (WSSS) originated in 2003 after a chance encounter during an offshore research cruise in the northern GOM. To date, more than 150 sightings have been added to the database, with more than half provided in 2008.
- Based on estimated sizes reported to the GCRL's WSSS, it appears that the whale sharks predominantly found in the northern GOM are juveniles.
- Whale sharks are often sighted in close proximity to oil rigs and gas platforms.
- Whale sharks are often found associated with other pelagic fishes including remora, cobia, jack, dolphin, tripletail, and tunas.
- Approximately 40% of the reported sightings are of aggregations of whale sharks ranging from two to 100 individuals.

- GCRL scientists have tagged several whale sharks with satellite tags. The results showed that the whale sharks exhibited vertical migrations, southerly travel, and deep (>1800 m) dives.

Biological Facts

- Whale sharks are found in all tropical and subtropical seas except for the Mediterranean Sea.
- The first report of a whale shark in the northern Gulf of Mexico (GOM) occurred in 1933 by commercial mariners traveling from the Florida Straights to Texas port cities.
- The whale shark is the world's largest fish, reaching lengths of 15 meters (about 50 feet) and a weight of 20 metric tons. The age of maturity for a whale shark has been estimated to be between 25 to 30 years. They are thought to live as long as 60 years.
- Whale sharks have distinctive markings of pale white spots and stripes on their dark dorsal surface; the pattern resembles a checkerboard. Since the spot pattern is unique to the individual, a photograph of the pattern behind the left gill slit can be used for identification. The GCRL is working with scientists at Ecocean.org to develop a whale shark photo identification database for the northern GOM.
- Whale sharks are opportunistic filter feeders that aggregate in areas of high localized productivity. In the northern GOM, there have been reports of aggregations of up to 150 individuals. A large number of the reported sightings occur in the region surrounding the Mississippi River drainage, presumably due to the high concentration of plankton in the nutrient-rich waters.
- Whale sharks use several feeding behaviors in response to the available prey type. For example, they are capable of suction feeding and may orientate themselves vertically in the water.
- Historically, there was much debate over the reproductive strategy utilized by whale sharks. In 1953, a shrimper off Texas reported catching an egg case containing a whale shark. This report led scientists to believe that whale sharks were egg-layers. However, in 1995, a single harpooned pregnant female proved that whale sharks are indeed ovoviviparous (the mother carries the embryos in her womb for protection but the babies rely solely on their yolk-sacs for nutrients until they are born). Inside her large womb were 300 embryos at various stages of development.
- Historically, in certain parts of the world, whale sharks have been hunted for their flesh, fins, and liver oil. Due to their declining numbers, this species is now internationally protected and listed as "Vulnerable" by the International Union for

the Conservation of Nature and Natural Resources (IUCN) and the Convention on International Trade in Endangered Species (CITES). In response to this listing, some nations that once harvested whale sharks now ban their capture and sale.